DJW

PTO/SB/21 (09-04)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission	9

Application Number	10/689,289
Filing Date	10/20/2003
First Named Inventor	James Edward Johnson
Art Unit	3746
Examiner Name	Tae Jun Kim
Attorney Docket Number	133476

ENCLOSURES *(Check all that apply)*

- [ ] Fee Transmittal Form
  - [ ] Fee Attached
- [ ] Amendment/Reply
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
- [ ] Reply to Missing Parts/ Incomplete Application
  - [ ] Reply to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s) _____
  - [ ] Landscape Table on CD
- [ ] After Allowance Communication to TC
- [ ] Appeal Communication to Board of Appeals and Interferences
- [X] Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- [ ] Proprietary Information
- [ ] Status Letter
- [ ] Other Enclosure(s) (please Identify below):

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Steven J. Rosen, Patent Attorney		
Signature	Steven J. Rosen		
Printed name	Steven J. Rosen		
Date	June 9, 2006	Reg. No.	29,972

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature	Steven J. Rosen		
Typed or printed name	Steven J. Rosen	Date	June 9, 2006

ATTORNEY DOCKET NO.
133476

DOC. ID
133476H

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant: James Edward Johnson	)	
	)	
Serial No: 10/689,289	)	Group Art Unit: 3746
	)	
Filed: 10/20/2003	)	Examiner: Tae Jun Kim
	)	
For: FLADE GAS TURBINE ENGINE WITH FIXED GEOMETRY INLET	)	

Commissioner for Patents
Alexandria, VA 22313-1450

REPLY BRIEF OF APPELLANT

In the Examiner's Answer mailed June 1, 2006, the Examiner raised certain new points of argument. Accordingly, this Reply Brief is being filed pursuant to 37 C.F.R. 1.193(b).

RESPONSE TO EXAMINER'S ARGUMENT

With regards to Issues 1 and 2 as discussed in the Examiner's Answer starting on page 8 under item (9) titled Grounds of the Rejection.

The Examiner stated that Johnson clearly teaches one of ordinary skill in the art that his invention can be used with both variable cycle (FLADE) engines as well as non-variable

cycle engines as found in column 4, lines 35-41 of Johnson. However, this is a mis-statement of the sentence as regards its wording, scope, and meaning. The two sentences discussing this point are as follows:

> "The exemplary embodiment of the present invention is illustrated in FIG. 2 as having a variable cycle inner engine 10 in terms sufficient to understand its operation and that of the present invention. Note that may different types of variable cycle engines as well as non-variable cycle turbofan and turbojet inner engines may be used for the purpose of this invention."

Thus, the Examiner is incorrect and the entire FLADE engine disclosed in Johnson is a variable cycle engine and only the inner engine 10 may be either a variable cycle engine or a non-variable cycle engine. The point is that the entire FLADE engine is a variable cycle engine whether the inner engine is a variable or non-variable cycle engine.

With regards to Issues 1 and 2 as discussed in the Examiner's Answer starting on page 15 under item (10) titled Response to Argument. The Examiner's reason for combining either of the two primary references Johnson (5,404,713) and (EP 0 567 277) with the secondary references is motivation to combine found in the secondary references. Furthermore the Examiner states that the secondary references provide specific evidentiary support of how those of ordinary skill in the art would construe the references to arrive at the claimed combination and that the secondary references provide specific reasons as to the advantages of the combination. The Examiner

concluded that there is a motivation to combine as well as specific evidentiary support in the secondary references of how those of ordinary skill in the art would construe the references to arrive at the claimed combination. However, the Examiner failed to address the issue raised by the Appellant, that the primary references teach using the row of FLADE fan blades disposed radially outwardly of and drivingly connected to the fan section to accomplish all of the functions that are the basis for these specific reasons where applicable. The secondary references teach a fixed geometry inlet duct for purposes that are redundant with the purposes of the FLADE fan blades as taught by the primary references. The Examiner failed to consider the prior art as a whole ignoring the purposes of the primary references. Thus, one skilled in the art would not be motivated to combine either of the two primary references with any combination of the secondary references.

Furthermore, both primary references clearly disclose a FLADE engine which is a variable cycle or variable bypass engine while all of the secondary references teach the use of a fixed geometry inlet duct with an engine that is not a variable cycle or variable bypass engine and, thus, the Examiner's conclusion that the secondary references provide specific reasons as to the advantages of the combination and a motivation to combine as well as specific evidentiary support of how those of ordinary skill in the art would construe the references to arrive at the claimed combination is not in fact supported by the secondary references and is mere conjecture on the part of the Examiner.

The Appellant disagrees with the following statement found on page 17 of the Examiner's Answer.

> "While Johnson '713 does not explicitly show the use of an inlet duct, the criteria for what makes a good inlet when using an inlet duct would not change, as this criteria is universal to all engines and all inlets."

This statement is clearly not true and not supported by any evidence or any of the cited references. There are many variable inlets designs, as one example, that are required or offer much better engine operating conditions and better match inlet air-handling characteristics with the engine. Nothing in the cited references even suggest that a fixed geometry inlet duct can provide any benefit to a variable cycle or variable bypass engine or to a FLADE engine such as the one found in the present Application and in the two primary references. Note, that FLADE engines are variable cycle or variable bypass engines.

The Appellant disagrees with the following statement found on page 17 of the Examiner's Answer.

> "Furthermore, while the fixed ducts of the prior art would place an intervening duct between the free air stream AO and the portion of the inlet immediately adjacent to the engine, Johnson would teach one of ordinary skill in the art to size the inlet ducts to the appropriate area so that the air-handling characteristics would match that of the engine."

Johnson clearly does not teach this. Johnson does not even discuss fixed geometry inlet duct. Johnson clearly teaches the use of at least one row of FLADE fan blades disposed

radially outwardly of and drivingly connected to the fan section so that the inlet has air-handling characteristics which are matched with the engine, as well as low drag and good flow stability. Johnson further teaches the following.

> "The importance of the air-flow matching characteristics can be shown from the area considerations of FIG. 1, which for the FLADE engine inlet 13 includes a free stream flow area A0 and the FLADE engine inlet area AI through which the total engine airflow passes. For a given set of operating flight conditions, the airflow requirements are fixed by the pumping characteristics of the FLADE engine 1. If AI is too small to handle the air, the engine must "suck in" the lacking amount of air resulting in a decreased ram recovery. If AI is too large, the FLADE engine inlet 13 will supply more air than the engine can use resulting in excess drag (spillage drag) because we must either by-pass the excess air around the engine or "spill" it back out of the inlet. Too much air or too little air is detrimental to inlet performance. The present invention provides the FLADE fan 2 and the FLADE duct 3 to avoid the spillage and the variable first FLADE vanes 6 and optionally the variable second FLADE vanes 7 to avoid the excess sucking and spillage and the resulting decreased ram recovery and spillage drag respectively."

This seems contrary to what the Examiner has concluded.

The Appellant disagrees with the following statement found on page 18 of the Examiner's Answer.

> "Note that Appellant's argument that the use of a fixed

geometry inlet will inhibit the operation of the FLADE engine can be construed as a tacit admission that Appellant's own invention will not work or at the very least have inhibited operation. Appellant cannot have it both ways and argue that it is not desirable for the prior art, when the express advantages of using a fixed inlet are taught, while at the same time maintain that the Appellant's own invention would present an improvement over the prior art."

The Appellant's argument was "The purposes of the FLADE type engines are contrary to the purposes of the fixed geometry inlets and the secondary references seem to inhibit the operation of Flade type engine." The Examiner substituted the phrase "will inhibit" for the phrase used by the Appellant "seem to inhibit". This is clearly not a tacit admission that Appellant's own invention will not work or at the very least have inhibited operation. This is what it seems to one skilled in the art at the time the invention was made. Why would one skilled in the art use the FLADE engine of Johnson with a FLADE fan blade if he could have used a fixed inlet duct as taught by the secondary references? Carrying the extra weight of a redundant inlet duct does seem to indicate that it will inhibit engine's operation.

The Examiner's argument that Tindell and Bullock allow for additional control over the amount of air delivered to the engine inlet and, thus, enhanced operability with the advantages expressed above does not overcome the Appellant's argument that "The Examiner has taken the elements of the primary and secondary references and the invention out of context and completely ignored the differences between the

elements of the FLADE type engines and the engines disclosed in the secondary references. The Examiner failed to take into consideration differences in construction, functionality, operation and cooperation of the FLADE fan with the engine's inlet.". Tindell provides boundary layer injection nozzles 11, 12, 13 to prevent boundary layer separation within an inlet duct. This does not in any way indicate or suggest that a FLADE fan is compatible with a fixed geometry inlet duct. Tindell discloses using his blown boundary layer control system with a non variable cycle and non variable bypass engine. The Appellant contends that Bullock does not disclose a fixed geometry inlet duct because of the vent 4 which when opens and changes the geometry of the duct to allow air in the duct to pass out of the duct and not flow into the engine's inlet in essence providing the duct with variable and fixed area outlets, the vent 4 being the variable area outlet. Furthermore, the prior art regarding FLADE engines, as those found in the primary references, teach one skilled in the art to use a FLADE engine to match air-handling characteristics which the engine. A description of the reason for using a FLADE engine can be found in column 4, lines 1-25 of the Johnson '713 patent. This reference clearly shows that a FLADE engine's purpose at the time of the invention was to match the air-flow matching characteristics to the FLADE engine inlet 13. This is so that a free stream flow area A0 and the FLADE engine inlet area AI through which the total engine airflow passes engine are matched and the engine doesn't "suck in" the lacking amount of air resulting in a decreased ram recovery if AI is too small to handle the air.

Also, if AI is too large, the FLADE engine inlet 13 will supply more air than the engine can use resulting in excess drag (spillage drag) because we must either by-pass the excess air around the engine or "spill" it back out of the inlet.

The Examiner's reason for combining the primary references with either Tindell and Bullock is to allow for additional control over the amount of air delivered to the engine inlet and, thus, enhanced operability with the advantages stated in the Examiner's Answer. However, if the flade fan blades and vanes are used to control the amount of air received through FLADE engine air inlet having an area AI, why would one skilled in the art want to add all the extra equipment, cost, weight, and complexity of such a control system. The answer is of course one would not and that there is nothing in the prior art that suggests such a combination to one skilled in the art. Since A0 does not appear to be able to vary in a fixed geometry inlet duct why would one skilled in the art combine a FLADE engine be used with a fixed geometry. This is the question that the Examiner has failed to answer and, thus, has failed to show even a suggestion in the prior art to combine either of the primary references with the any of the secondary references.

Respectfully submitted,

Steven J. Rosen
Attorney for Appellant
Reg. No. 29,972
(513) 489-5383

June 9, 2006